



Missouri Department of Health and Senior Services

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MISSOURI STATE PUBLIC HEALTH LABORATORY VIROLOGY LABORATORY

SARS INFORMATION

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The Missouri State Public Health Laboratory (MSPHL) is currently offering serology and Polymerase Chain Reaction (RT-PCR) testing for SARS Coronavirus (**SARS-CoV**). If a patient is suspected of being infected with the SARS virus, please call the Disease Investigation Unit of the Missouri Department of Health and Senior Services at 573-751-6113 (800-392-0272, after hours).

Testing will only be performed on patients that have been approved by the Disease Investigation Unit.

At the present time the MSPHL has the capacity to perform serology and RT-PCR testing. If specimens are to be sent to the MSPHL, the following samples should be collected:

- (1) Serum for ELISA Serology,
- (2) Respiratory specimen for RT-PCR*
- (3) Stool for RT-PCR*

*When possible, it is preferable to collect multiple specimens for testing. For example, collect specimens from two different sites on the same day and additional specimens later during illness.

Specimens that test negative for SARS-CoV, by both ELISA and PCR will be tested for Influenza and respiratory syncytial virus (RSV) by ELISA if not performed prior to submission to the SPHL, Virus Culture will be performed on all specimens for a viral respiratory panel that includes: influenza, parainfluenza, RSV, adenovirus and enterovirus.

Attached you will find the instructions for submitting samples to the Missouri State Public Health Laboratory for SARS testing.

www.dhss.state.mo.us

The Missouri Department of Health and Senior Services protects and promotes quality of life and health for all Missourians by developing and implementing programs and systems that provide: information and education, effective regulation and oversight, quality services, and surveillance of diseases and conditions.

AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER: Services provided on a nondiscriminatory basis.

INSTRUCTIONS FOR SUBMITTING SPECIMENS FOR SARS TESTING TO THE MISSOURI STATE PUBLIC HEALTH LABORATORY

Please contact the Missouri Dept. of Health and Senior Services Section of Disease Investigation (SDI) at 573-751-6113 (800-392-0272, after hours) for consultation before shipping specimens.

SPECIMEN COLLECTION

I. RESPIRATORY TRACT SPECIMENS

Respiratory specimens should be collected as soon as possible in the course of the illness. The likelihood of recovering most viruses diminishes markedly >72 hours after symptom onset. Some respiratory pathogens may be isolated after longer periods.

A. UPPER RESPIRATORY TRACT

Three types of specimens may be collected for PCR. These include:

- Nasopharyngeal wash/aspirates
- Nasopharyngeal swabs
- Oropharyngeal swabs.

Nasopharyngeal aspirates are the specimen of choice for detection of respiratory viruses and are the preferred collection method among children aged <2 years.

1. Collection of nasopharyngeal wash/aspirate

Have the patient sit with the head tilted slightly backward, Instill 1-1.5 ml of nonbacteriostatic saline (pH 7.0) into one nostril. Flush a plastic catheter or tubing with 2-3 ml of saline. Insert the tubing into the nostril parallel to the palate. Aspirate nasopharyngeal secretions. Repeat this procedure for the other nostril. Collect specimens in sterile vials. Ship with cold packs to keep sample at 4°C.

2. Collection of nasopharyngeal or oropharyngeal swabs

Use only sterile Dacron or rayon swabs with plastic shafts. Do **not** use calcium alginate swabs or swabs with wooden sticks, as they may contain substances that inactivate some viruses and inhibit PCR testing.

Nasopharyngeal swabs- Insert swab into nostril parallel to the palate and leave in place for a few seconds. to absorb secretions. Swab both nostrils.

Oropharyngeal swabs- Swab both posterior pharynx and tonsillar areas, avoiding the tongue.

Place the swabs immediately into sterile vials containing 2 ml. of viral transport media. Break applicator sticks off near the tip to permit tightening of the cap. Specimens should then be placed in the safety containers supplied with kit. Ship with cold packs to keep sample at 4°C.

B. LOWER RESPIRATORY TRACT

Bronchoalveolar lavage (BAL), tracheal aspirate, or pleural tap

Place fluid in sterile vials with external caps and internal O-ring seals. If there are no internal O-ring seals, seal tightly with the available cap and secure with Parafilm®.

If the patient is intubated and it is clinically indicated, consider a transbronchial, fine needle or open lung biopsy. For domestic transportation, store and ship with cold packs to keep samples at 4°C

Collection of sputum

Have the patient rinse the mouth with water then expectorate deep cough sputum directly into a sterile screw-cap sputum collection cup or sterile dry container. For domestic transportation, store and ship with cold packs to keep samples at 4°C

II. SERUM

Collection of serum for antibody or RT-PCR testing

Acute serum specimens should be collected and submitted as soon as possible. If the patient meets the case definition, convalescent specimens should be collected >28 days after the onset of illness.

Collect 5-10 ml. Of whole blood in a red-top Vacutainer tube (or equivalent). Allow blood to clot, centrifuge briefly and submit serum. A minimum of 1 mL of serum is required for testing. Place in a safety container and ship with cold packs to keep sample at 4°C. If frozen ship on dry ice.

III. Stool

Collection of stool for RT-PCR

Begin collecting stool specimens as soon as possible in the course of the illness. Place each stool specimen (at least 10 cc), in a leak-proof, clean, dry container and refrigerate at 4°C. If specimens must be held longer than 48 hours, freeze them as soon as they are collected and ship on dry ice.

ALL SPECIMENS MUST BE LABELED WITH PATIENTS NAME AND THE DATE COLLECTED.

A COPY OF THE CDC-SARS SUBMISSION FORM FOR POTENTIAL CASES OF SARS MUST ACCOMPANY THE SPECIMENS.

The CDC-SARS Submission Form may be found at the SPHL web site:

http://www.dhss.state.mo.us/Lab/sars_specimens_files/specimensubmissionform_sars.pdf

Please write the submitters address in the space provided and submit both pages of the form.

EACH PATIENT MUST ALSO SUBMIT A CONSENT FORM FOR SARS TESTING.

There are two different consent forms, one for serology testing and one for RT-PCR.

Both Consent Forms must be completed if serology and RT-PCR procedures are requested.

TESTING WILL NOT BE PERFORMED UNTIL CONSENT FORMS HAVE BEEN RECEIVED.

Consent forms may be found at: http://www.dhss.state.mo.us/Lab/sars_specimens_files/sars.htm

TESTING RESULTS

1. ELISA for antibody detection (serum)

Detects IgM & IgG antibody to SARS coronavirus (SARS-CoV)

POSITIVE-Indicates a previous infection with SARS-CoV.

Seroconversion from negative to positive or a 4-fold rise in antibody titer from acute to convalescent serum indicates recent infection.

NEGATIVE-On a serum collected >28 days after onset of illness indicates no infection with SARS-CoV.

2. RT-PCR for viral detection (respiratory specimens)

POSITIVE....Indicates recent infection with SARS-CoV.

NEGATIVE...Can not exclude SARS-CoV. as cause of illness.

ALL POSITIVE SPECIMENS WILL BE SENT TO CDC FOR CONFIRMATION

Contents of SARS kit:

1. Outside cardboard box.
2. Styrofoam inner container
3. Freezer packs (place in freezer upon receipt)
4. 2 tubes of TPB (place in refrigerator upon receipt) with safety containers.
5. 1 red-top vacutainer tube with safety container.
6. 2 swabs (Dacron)
7. Biohazard ziplock bag
8. Collection instructions
9. CDC SARS patient Information Requisition, and Consent Form for SARS Testing.

DO NOT DISCARD ANY OF THE ITEMS LISTED ABOVE. RETURN THE ENTIRE KIT (INNER BOX, FREEZE PACKS, OUTER BOX) WITH THE SPECIMENS PACKED AS DIRECTED.

To order kits: 573-751-0633, Virology Unit